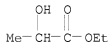


<http://www.cas.org/support/stngen/stdoc/properties.html>

```
=> s ethyl lactate/cn
L1      1 ETHYL LACTATE/CN

=> d

L1  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2008 ACS on STN
RN  97-64-3  REGISTRY
ED  Entered STN:  16 Nov 1984
CN  Propanoic acid, 2-hydroxy-, ethyl ester  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN  Lactic acid, ethyl ester (6CI, 8CI)
OTHER NAMES:
CN  (±)-Ethyl 2-hydroxypropionate
CN  (±)-Ethyl lactate
CN  (±)-Lactic acid ethyl ester
CN  2-Hydroxypropanoic acid ethyl ester
CN  Actylol
CN  Acytol
CN  DL-Ethyl lactate
CN  dl-Lactic acid ethyl ester
CN  Ethyl α-hydroxypropionate
CN  Ethyl 2-hydroxypropanoate
CN  Ethyl 2-hydroxypropionate
CN  Ethyl lactate
CN  Ethyl rac-lactate
CN  NSC 8850
CN  PBR 40
CN  Purasolv ELS
CN  Solactol
CN  Vertec ELS
CN  VertecBio EL
DR  2676-33-7
MF  C5 H10 O3
CI  COM
LC  STN Files:  AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
    CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST,
    CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*,
    HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT,
    PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL,
    USPATOLD, VETU
    (*File contains numerically searchable property data)
Other Sources:  DSL**, EINECS**, TSCA**
    (**Enter CHEMLIST File for up-to-date regulatory information)
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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3440 REFERENCES IN FILE CA (1907 TO DATE)
 43 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 3451 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 49 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> file caplus		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	7.61	7.82

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FILE COVERS 1907 - 9 Sep 2008 VOL 149 ISS 11
 FILE LAST UPDATED: 8 Sep 2008 (20080908/ED)

Caplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/legal/infopolicy.html>

=> s 97-64-3/prep
 3451 97-64-3
 4633127 PREP/RL
 L2 251 97-64-3/PREP
 (97-64-3 (L) PREP/RL)

=> s 97-64-3/proc
 3451 97-64-3
 4424658 PROC/RL
 L3 299 97-64-3/PROC
 (97-64-3 (L) PROC/RL)

=> s 97-64-3/pur
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 288773 PUR/RL
 L4 29 97-64-3/PUR
 (97-64-3 (L) PUR/RL)

10/923,271

=> s 12 or 13 or 14
L5 533 L2 OR L3 OR L4

=> s 15 and ethanol and lactic acid
307690 ETHANOL
114318 LACTIC
4669411 ACID
98199 LACTIC ACID
(LACTIC(W)ACID)
L6 68 L5 AND ETHANOL AND LACTIC ACID

=>

=> s 16 and catalyst
813985 CATALYST
L7 34 L6 AND CATALYST

=> s 17 and flash?
75030 FLASH?
L8 1 L7 AND FLASH?

=> s 17 and py<2002
21968360 PY<2002
L9 13 L7 AND PY<2002

=> d 18 ibib abs hitstr

L8 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:472091 CAPLUS
DOCUMENT NUMBER: 141:39933
TITLE: Continuous esterification process for the preparation
of ethyl lactate from lactic acid
and ethanol
INVENTOR(S): Tretjak, Serge; Burtin, Elie; Teissier, Remy
PATENT ASSIGNEE(S): Atofina, Fr.
SOURCE: Fr. Demande, 12 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2848209	A1	20040611	FR 2002-15348	20021205
FR 2848209	B1	20061013		
CA 2508125	A1	20040624	CA 2003-2508125	20031205
WO 2004052825	A2	20040624	WO 2003-FR3598	20031205
WO 2004052825	A3	20040715		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,			

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG

AU 2003298421 A1 20040630 AU 2003-298421 20031205
 AU 2003298421 B2 20080424
 EP 1569891 A2 20050907 EP 2003-796169 20031205

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

BR 2003017047 A 20051025 BR 2003-17047 20031205
 CN 1720215 A 20060111 CN 2003-80104917 20031205
 JP 2006509024 T 20060316 JP 2004-558173 20031205
 US 20060041165 A1 20060223 US 2005-537422 20050602
 MX 2005PA05962 A 20060208 MX 2005-PA5962 20050603
 KR 762773 B1 20071004 KR 2005-710224 20050604

PRIORITY APPLN. INFO.: FR 2002-15348 A 20021205
 WO 2003-FR3598 W 20031205

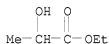
OTHER SOURCE(S): CASREACT 141:39933

AB The invention relates to a continuous method of preparation of Et lactate by lactic acid esterification with ethanol in the presence of an esterification catalyst followed by product purification through extraction and distillation using a fractional distillation column. A process flow diagram is presented.

IT 97-64-3P, Ethyl lactate
 RL: CPS (Chemical process); EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PREP (Preparation); PROC (Process)
 (continuous esterification process for the preparation of Et lactate from lactic acid and ethanol)

RN 97-64-3 CAPLUS

CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 19 1-13 ibib abs hitstr

L9 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:826886 CAPLUS

DOCUMENT NUMBER: 136:401440

TITLE: Catalytic esterification of lactic acid with sodium bisulfate

AUTHOR(S): Wen, Rui-ming; You, Pei-qing; Yu, Shan-xin

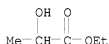
CORPORATE SOURCE: Department of Chemistry, Yiyang Teachers College, Yiyang, 413049, Peop. Rep. China

SOURCE: Hecheng Huaxue (2001), 9(4), 375-378

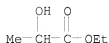
CODEN: HEHUE2; ISSN: 1005-1511

PUBLISHER: Hecheng Huaxue Bianjibu

DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 OTHER SOURCE(S): CASREACT 136:401440
 AB The study on sodium bisulfate used in the esterification of lactic acid and various alcs. is reported and 11 kinds of lactates were synthesized. The properties of the lactates, such as b.p.(b.p.), refractive index (nD20), IR and 1H NMR were measured.
 IT 97-64-3P, Ethyl lactate
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (catalytic esterification of lactic acid with sodium bisulfate)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2001:55181 CAPLUS
 DOCUMENT NUMBER: 135:34574
 TITLE: Synthesis of ethyl lactate by esterification with solvent drying
 AUTHOR(S): Liu, Rong-fang; Xiao, Xiu-feng; Wang, Qin-ping; Zhu, Ze-shan
 CORPORATE SOURCE: Department of Chemistry, Institute of Applied Chemistry, Fujian Normal University, Fuzhou, 350007, Peop. Rep. China
 SOURCE: Jingxi Huagong (2000), 17(12), 714-716
 CODEN: JIHUFJ; ISSN: 1003-5214
 PUBLISHER: Jingxi Huagong Bianjibu
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB Preparation of Et lactate from lactic acid and EtOH was studied. Esterification reaction was carried out in a Soxhlet extraction apparatus, with p-MeC6H4SO3H as catalyst and CaO, mol. sieve 3A or MgSO4 as cyclohexane solvent dehydrating agent. Various reaction parameters were also examined. The productivity of Et lactate was improved by including a dehydrating agent in the reaction system. The productivity was increased to a highest point and then reduced slightly with increasing amount of catalyst and mol. ratio EtOH/lactic acid and prolonging the reaction time. The productivity of Et lactate reached 84.5% under the following optimum conditions: lactic acid 0.1 mol, EtOH 0.3 mol, p-MeC6H4SO3H 1.0 g, cyclohexane 50 mL, CaO 18.7 g and reaction time 2 h.
 IT 97-64-3P, Ethyl lactate
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of Et lactate by esterification of lactic acid with ethanol with cyclohexane solvent drying)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2000:472757 CAPLUS
 DOCUMENT NUMBER: 133:58542
 TITLE: Method of using natural materials for synthesizing ethyl lactate
 INVENTOR(S): Meng, Yongcai; Luo, Tong
 PATENT ASSIGNEE(S): Yin, Changshu, Peop. Rep. China
 SOURCE: Faming Zhuanli Shengqing Gongkai Shuomingshu, 5 pp.
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

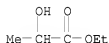
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1229790	A	19990929	CN 1998-111914	19980319 <--
PRIORITY APPLN. INFO.:			CN 1998-111914	19980319

AB The process comprises preparing lactic lactone for lactic acid, esterifying with ethanol in the presence of strongly acidic macroporous polystyrene exchange resin/AlCl₃ (0.9-1.1:1) complex catalyst at 80°+3° for >2 h, distilling at 120°+5° to obtain crude ester while adding ethanol in dropwise, and rectifying by conventional method. The ratio of complex catalyst to lactic acid is 0.1-0.15%. The mole ratio of lactic acid to ethanol is 1:1-1.5.

IT 97-64-3P, Ethyl lactate
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
 (preparation of Et lactate)

RN 97-64-3 CAPLUS

CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2000:164652 CAPLUS
 DOCUMENT NUMBER: 132:165940
 TITLE: Preparation of pyruvic acid and its calcium salt from lactic acid
 INVENTOR(S): Ding, Hangjun; Cheng, Yanxiang; Gao, Jingxi
 PATENT ASSIGNEE(S): Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

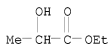
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1188100	A	19980722	CN 1997-112512	19970708 <--
PRIORITY APPLN. INFO.:			CN 1997-112512	19970708

AB The process comprises esterifying lactic acid with ethanol to obtain Et lactate, adding catalyst and petroleum ether as phase separating agent, oxidizing with oxidant at 0-20°, 1-30 mmHg and pH 3-13, collecting petroleum ether phase, recovering solvent, distilling at 56-57° and 20 mmHg to obtain Et pyruvate, saponifying with Ca(OH)2 to obtain Ca pyruvate, adding stabilizer, and drying in vacuum. The process may comprises oxidizing lactic acid with oxidant in Et ether at 0-20°, 1-30 mmHg and pH 3-13, recovering solvent, distilling at 70.8° and 20 mmHg to obtain pyruvic acid, neutralizing with Ca(OH)2 solution, and drying in vacuum to obtain Ca pyruvate. The oxidant is selected from KMnO4, H2O2, CrO3, and K2Cr2O7, etc.

IT 97-64-3P, Ethyl lactate
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of pyruvic acid and its calcium salt from lactic acid)

RN 97-64-3 CAPLUS

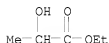
CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



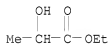
L9 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:722057 CAPLUS
 DOCUMENT NUMBER: 132:280844
 TITLE: Comparison of catalysts in lactic acid esterification
 AUTHOR(S): Li, Ru-Zhen; Su, Tao
 CORPORATE SOURCE: Guangxi Vocational Technical Institute, Nanning, 530227, Peop. Rep. China
 SOURCE: Guangxi Huagong (1999), 28(3), 35-37
 CODEN: GUHUF2; ISSN: 1003-0840
 PUBLISHER: Guangxi Huagong Bianjibu
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese

AB FeCl3, SnCl2, SnCl4, NiCl2, AlCl3, CuCl2, CrCl3, H2SO4, CuSO4, ZnSO4, strong acid ion exchange resin, and solid acid were employed as catalysts for esterification of lactic acid with ethanol at <100° without agitation. The results showed that the lowest content of Et lactate was 72% of the highest one with various catalysts.

The order of catalytic effect was H2SO4, SnCl4, AlCl3, etc.
 IT 97-64-3P, Ethyl lactate
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (catalysts for esterification of lactic acid with
 ethanol)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)

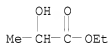


L9 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:435756 CAPLUS
 DOCUMENT NUMBER: 132:139052
 TITLE: Preparation of C1-C5 lactates and lactide
 AUTHOR(S): Su, Tao; Pang, Qi
 CORPORATE SOURCE: College of Chemistry and Chemical Engineering, Guangxi
 Univ., Nanning, 530004, Peop. Rep. China
 SOURCE: Huagong Shikan (1999), 13(4), 7-12
 CODEN: HUSHT; ISSN: 1002-154X
 PUBLISHER: Huagong Shikan Zazhishe
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB C1-C5 alcs. (methanol, ethanol, isopropanol, n-butanol,
 isobutanol, and isoamyl alc.) esterified D,L-lactic acid
 to form corresponding D,L-lactates, the lactates were heated in presence
 of stannous caprylate catalyst in N2 or CO2 atmosphere and/or
 heated under -0.098 MPa without introducing N2 or CO2 to obtain racemic-
 and meso- lactide. The yield of C4-C5 lactate was >80% without using
 entraining agent. The racemic-lactide was the target product, and the
 meso-one was recovered as a raw material. The single pass yield of
 racemic-lactide was 22-35%, and the single pass consumption rates of the
 lactates (except Me lactate) reached 26%-38%.
 IT 97-64-3P, Ethyl lactate
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP
 (Preparation); RACT (Reactant or reagent)
 (preparation of C1-C5 lactates and lactide)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1998:291081 CAPLUS
 DOCUMENT NUMBER: 128:296124
 ORIGINAL REFERENCE NO.: 128:58673a, 58676a
 TITLE: Synthesis of ethyl lactate catalyzed by modified

zirconium oxide
 AUTHOR(S): Li, Dechang; Huang, Chunlin; Wei, Shanhuai; Zou, Hong
 CORPORATE SOURCE: Guangxi Res. Inst. of Chemical Ind., Nanning, 530001,
 Peop. Rep. China
 SOURCE: Guangxi Huagong (1997), 26(4), 16-18
 CODEN: GUHUF2; ISSN: 1003-0840
 PUBLISHER: Guangxi Huagong Bianjibu
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB A new technique employing modified zirconium oxide to replace the concentrated
 sulfuric acid as catalyst in synthesis Et lactate is studied.
 Good catalytic quality is obtained, and corrosion is avoided. Yield rate
 reaches 90%. Modified zirconium oxide is recyclable and easy to be separated
 from product.
 IT 97-64-3P, Ethyl lactate
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of Et lactate by esterification of lactic
 acid by ethanol using modified zirconium oxide as
 catalyst)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)

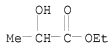


L9 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:994383 CAPLUS
 DOCUMENT NUMBER: 124:59841
 ORIGINAL REFERENCE NO.: 124:11217a,11220a
 TITLE: Process of manufacture of ethyl lactate
 INVENTOR(S): Wu, Menghai; He, Weimin
 PATENT ASSIGNEE(S): State-Run Wujiang Perfumery, Peop. Rep. China
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1102180	A	19950503	CN 1993-118797	19931028 <--
CN 1032855	C	19960925		

PRIORITY APPLN. INFO.: CN 1993-118797 19931028
 AB The process comprises mixing 80% lactic acid and
 92-93% ethanol in weight ratio 1:(0.6-1.6), catalytic
 esterification using 3-acidic component catalyst, de-watering
 using anhydrous ethanol (ethanol content 99.1-99.6%),
 recovering ethanol, and distillation under a reduced pressure. The
 catalyst is formed by combining H-type acidic resin, complex of
 glycerin (or ethylene glycol) and boric acid, sodium dihydrogen phosphate
 in weight ratio 1:(0.5-1.0):(0.1-0.2). The products are used in food

industry.
 IT 97-64-3P, Ethyl lactate
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (process of manufacture of Et lactate)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:511804 CAPLUS
 DOCUMENT NUMBER: 122:264918
 ORIGINAL REFERENCE NO.: 122:48361a, 48364a
 TITLE: Preparation of lactic acids by carbonylation of
 acetaldehydes
 INVENTOR(S): Hirai, Koichi; Bando, Yasuo
 PATENT ASSIGNEE(S): Ube Industries, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

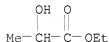
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07041455	A	19950210	JP 1993-190338	19930730 <--
PRIORITY APPLN. INFO.:			JP 1993-190338	19930730

OTHER SOURCE(S): CASREACT 122:264918

AB In preparation of lactic acids from acetaldehydes, CO, and H₂O or alcs., the
 acetaldehydes are carbonylated by CO in the presence of 70-95 volume% H₂SO₄.
 A mixture of MeCHO, H₂SO₄, and H₂O was treated with CO at room temperature
 under

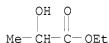
40 atm for 5 h to give 56.5% lactic acid.

IT 97-64-3P, Ethyl lactate
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
 (Preparation)
 (preparation of lactic acids by carbonylation of acetaldehydes by CO and H₂O
 or alcs. with H₂SO₄ catalyst)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)

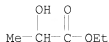


L9 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1991:538586 CAPLUS

DOCUMENT NUMBER: 115:138586
 ORIGINAL REFERENCE NO.: 115:23747a,23750a
 TITLE: Cationic exchange resin having strong acidity used as a catalyst in the esterification of lactic acid
 AUTHOR(S): Li, Yongguang; Wang, Jingmin
 CORPORATE SOURCE: Taiyuan Univ. Technol., Taiyuan, Peop. Rep. China
 SOURCE: Taiyuan Gongye Daxue Xuebao (1990), 21(4), 43-6
 CODEN: TGDXEZ; ISSN: 1000-1611
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB Et and Bu lactates were prepared using strongly acidic cation exchangers, 732 and D72, as catalysts. When the alc.-acid molar ratio was 3.5:1 and the catalyst concentration was 60% that of lactic acid, the yield of the lactates was >90%.
 IT 97-64-3P, Ethyl lactate
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of, catalysts for, strongly acidic cation exchangers as)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1989:215145 CAPLUS
 DOCUMENT NUMBER: 110:215145
 ORIGINAL REFERENCE NO.: 110:35701a,35704a
 TITLE: Application of macroporous cation exchange resin in the synthesis of ethyl lactate
 AUTHOR(S): Chen, Min; Jiang, Peihua; Quan, Yi; Xia, Tianxi; Zhang, Hao
 CORPORATE SOURCE: Dep. Org. Chem. Eng., Jiangsu Inst. Chem. Technol., Changzhou, Peop. Rep. China
 SOURCE: Lizi Jiaochuan Yu Xifu (1988), 4(3), 184-9
 CODEN: LJYXE5; ISSN: 1001-5493
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB Et lactate was prepared by esterification of lactic acid with EtOH in the presence of sulfonated styrenated-type cation exchanger as catalyst. Factors affecting the reaction were studied including reaction temperature, molar ratio of the reactants, flow rate, and height of the column bed. Under optimal reaction conditions, the total yield could reach >80%.
 IT 97-64-3P, Ethyl lactate
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of, catalysts for, sulfonated styrenated-type cation exchange resins as)
 RN 97-64-3 CAPLUS
 CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:498561 CAPLUS

DOCUMENT NUMBER: 107:98561

ORIGINAL REFERENCE NO.: 107:16073a,16076a

TITLE: Recovery of biologically produced chemicals: regeneration of adsorbent beds by entrainer distillation and/or esterification directly on the bed
 AUTHOR(S): Sanchez, Paul A.; Kawano, Yoshinobu; King, C. Judson
 CORPORATE SOURCE: Dep. Chem. Eng., Univ. California, Berkeley, CA, 94720, USA

SOURCE: Industrial & Engineering Chemistry Research (1987), 26(9), 1880-7

CODEN: IECRED; ISSN: 0888-5885

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two approaches are explored for regeneration of adsorbent beds used for recovery of carboxylic acids and other polar orgs. from aqueous solution In the

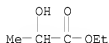
first, entrainer distillation is carried out directly on the bed. A solvent vapor is fed to the top of the bed, and the overhead vapor is condensed and withdrawn. Coadsorbed water can be separated from the adsorbed solute in this way. In the second, esterification of an adsorbed carboxylic acid occurs on the adsorbent bed. Certain oxidation methods provide activated carbons which retain good adsorbent properties while simultaneously being effective catalysts for esterification. The ester is more readily removed by vaporization or solvent leaching than is the precursor acid. Acetic acid with MeOH and EtOH and lactic acid with EtOH and BuOH are studied.

IT 97-64-3P, Ethyl lactate

RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, on active carbon, regeneration of adsorbent beds by entrainer distillation in relation to)

RN 97-64-3 CAPLUS

CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)



L9 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:442048 CAPLUS

DOCUMENT NUMBER: 107:42048

ORIGINAL REFERENCE NO.: 107:7021a,7024a

TITLE: Preparation of ethyl lactate by a solid catalyst - LH-8561

AUTHOR(S): He, Xingtao; Qin, Shidong; Liu, Limin

CORPORATE SOURCE: Hunan Norm. Univ., Changsha, Peop. Rep. China
SOURCE: Hunan Shifan Daxue Ziran Kexue Xuebao (1986
) , 9(4), 40-5
CODEN: HSDXEL; ISSN: 1000-2537
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Et lactate was prepared by reaction of lactic acid with
EtOH using LH 8561 solid catalyst and PhMe as solvent with
continual removal of water. The catalytic efficiency increased with
increasing catalyst concentration up to 10%. This catalyst
could be used repeatedly and showed high selectivity.
IT 97-64-3P, Ethyl lactate
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of, catalysts for)
RN 97-64-3 CAPLUS
CN Propanoic acid, 2-hydroxy-, ethyl ester (CA INDEX NAME)

